



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/890,840	01/16/2002	Wolfgang Schlegel	4139-121	8107

23448 7590 07/14/2003

INTELLECTUAL PROPERTY / TECHNOLOGY LAW  
PO BOX 14329  
RESEARCH TRIANGLE PARK, NC 27709

EXAMINER

HO, ALLEN C

ART UNIT

PAPER NUMBER

2882

DATE MAILED: 07/14/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/890,840

Applicant(s)

SCHLEGEL ET AL.

Examiner

Allen C. Ho

Art Unit

2882

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 16 January 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 5, 6, 10 and 11 is/are rejected.
- 7) ☒ Claim(s) 2-4, 7-9 and 12 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 January 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Drawings*

1. Fig. 3 is objected because it contradicts Fig. 2. Fig. 2 shows a hanging diaphragm element (13) and a standing diaphragm element (14), whereas Fig. 3 shows a hanging diaphragm element (14) and a standing diaphragm element (13). Furthermore, the elements associated with the hanging diaphragm elements should have unprimed reference numbers, and the elements associated with the standing diaphragm elements should have primed reference numbers.
2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: 43 and 44 (Fig. 5), 66 (Fig. 9). A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.
3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 63 (page 11, line 6). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.
4. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "angle" in claim 6 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Art Unit: 2882

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

*Specification*

5. The abstract of the disclosure is objected to because the abstract should be limited to a single paragraph. Correction is required. See MPEP § 608.01(b).

6. The disclosure is objected to because of the following informalities:

(1) Page 8, line 12, "spacer" should be replaced by --bearing surface--.

(2) Page 9, line 5, "24" should be replaced by --24'--.

(3) Page 10, line 2, "40" should be replaced by --43--.

Appropriate correction is required.

*Claim Rejections - 35 USC § 112*

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claim 6 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The "angle" is not defined in a way that can be understood.

*Claim Rejections - 35 USC § 102*

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 1, 5, and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Span *et al.* (U. S. Patent No. 5,012,506).

With regard to claim 1, Span *et al.* disclosed a contour collimator (17) for radiation therapy comprising a plurality of diaphragm elements (18) having two sides and a first and second terminal portion (Fig. 6(a)), wherein the diaphragm elements are arranged in a fan formation (column 3, lines 39-44) and are arranged movably with respect to each other, such movement being powered by a drive unit (29) for each diaphragm element, and wherein the diaphragm elements are supported only on the first terminal portion (column 4, lines 32-44) of the diaphragm element that is positioned near (in proximity) the drive unit.

With regard to claim 5, Span *et al.* disclosed the contour collimator according to claim 1, wherein at least two diaphragm elements (on opposite sides) are arranged with some separation, opposite, and slightly offset relative to one another, and movably towards one another in more than half the distance of separation.

With regard to claim 11, Span *et al.* disclosed the contour collimator according to claim 1, wherein the drive units are arranged parallel to each other (Fig. 2).

Art Unit: 2882

***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Span *et al.* (U. S. Patent No. 5,012,506) as applied to claim 1 above, and further in view of Gould *et al.* (U. S. Patent No. 3,736,486).

With regard to claim 10, Span *et al.* disclosed the contour collimator according to claim

1. However, Span *et al.* did not teach that the drive unit is equipped with a rotary potentiometer to record the position of the diaphragms.

Gould *et al.* disclosed a rotary potentiometer (114) that is coupled to a servo-motor for producing a position signal.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to equip the drive unit with a rotary potentiometer, since a person would be motivated to track the position of the diaphragm element.

***Allowable Subject Matter***

13. Claims 2-4, 6-9, and 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

14. The following is a statement of reasons for the indication of allowable subject matter:

Art Unit: 2882

With regard to claims 2-4, 7, and 12, although the prior art discloses a contour collimator according to claim 1, it fails to teach or fairly suggest that the first terminal portion of the diaphragm elements are furnished with a toothed rack communicatively connected to the drive unit.

With regard to claims 8 and 9, although the prior art discloses a contour collimator according to claim 1, it fails to teach or fairly suggest that at least two diaphragm elements form a diaphragm group which is arranged movably in the direction of movement of the diaphragm elements in addition to the movement of individual diaphragm elements.

### *Conclusion*

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- (1) Pastyr *et al.* (U. S. Patent No. 6,188,748 B1) disclosed a contour collimator for radiotherapy. The diaphragm elements are not arranged in a fan formation.
- (2) Shiu *et al.* (U. S. Patent No. 5,555,283) disclosed a computer-controlled miniature multileaf collimator.
- (3) Swerdloff *et al.* (U. S. Patent No. 5,442,675) disclosed a dynamic collimator for radiation therapy.
- (4) Swerdloff *et al.* (U. S. Patent No. 5,351,280) disclosed a multi-leaf radiation attenuator for radiation therapy.
- (5) Klasen *et al.* (U. S. Patent No. 4,987,309) disclosed a multi-leaf collimator.

Art Unit: 2882

- (6) Pastyr *et al.* (U. S. Patent No. 4,794,629) disclosed a contour collimator for radiation therapy comprising diaphragm elements that are furnished with a toothed rack communicatively connected to the drive unit.
- (7) Blosser *et al.* (U. S. Patent No. 4,739,173) disclosed a multi-leaf collimator.
- (8) Hüttenrauch *et al.* (U. S. Patent No. 4,672,652) disclosed a collimator comprising diaphragm elements that are furnished with a toothed rack communicatively connected to the drive unit.

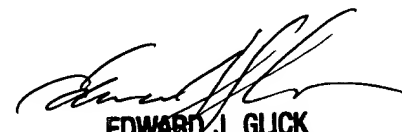
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allen C. Ho whose telephone number is (703) 308-6189. The examiner can normally be reached on Monday - Friday from 8:00 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward J. Glick can be reached at (703) 308-4858. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0530.

Allen C. Ho  
Examiner  
Art Unit 2882

ACH  
July 3, 2003

  
EDWARD J. GLICK  
Supervisor of Art Unit 2882 EXAMINER  
TECHNOLOGY CENTER 2800